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09/730,375	12/05/2000	Charles Simonyi	777.355US6	7330

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EXAMINER

VO, TED T

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 07/15/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/730,375

Applicant(s)

SIMONYI, CHARLES

Examiner

Ted T. Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This action is in response to the communication filed on 5/01/03.  
Claims 13-24 are amended.  
Claim 24 is amended as to be dependent on the independent claim 21.  
Claims 21-24 are currently rejected under 35 U.S.C. 101.  
Claims 13-24 are currently rejected under 35 U.S.C. 102(b) as being anticipated by Aho et al.  
Claims 13-24 are pending in the application.

***Drawings***

2. The corrected or substitute drawings were received on 5/1/03. The examiner for examination purpose accepts these drawings. The approval/objection of the drawings will be notified by the Draftsperson.

***Response to Arguments***

3. a. Responsive to applicant's amendment of claims 21-23, where the applicants argue that the amendment overcomes the rejection under 35 U.S.C 101:

Examiner disagrees: The amendment fails to bring the claims to meet the statutory requirement. Therefore, the rejection will be maintained as set forth in section 4 below.

Even the claims are amended as "a data structure stored on one or more computer readable media", and a second node having data to be manipulated when implementing the syntax-independent programming intent, the features of the claims remain a description of nodes in a tree hierarchy, where the first node represents a syntax-independent programming intent and the second node is similar to a generic node of a tree.

A claim, which is merely claiming nonfunctional descriptive material even being stored in a computer-readable medium without further practical application, shall not make the claim eligible for patenting (see MPEP 2106).

b. Responsive to applicant's arguments over the rejection under 35 U.S.C. 102(b) as being anticipated by Aho et al:

Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection will be maintained as set forth in section 5 below.

- Applicants argue that they describe a program that can be developed and represented by a "high level program tree that is a syntax-independent representation" of a programmer's intent (description p.4, lines 33-37) which is in contrast to conventional programming systems in which a programmer manipulates a textual representation of the program that is later converted into a syntax tree during compilation.

Examiner responds: The claim limitation does not read what applicants argued, '*describes a program can be developed and represented by a "high level program tree that is a syntax-independent representation" of a programmer's intent*'. The claim is solely claiming the identification of nodes.

- In regards to claim 13, applicants argue that Aho does not show or disclose a node of data structure "representing a syntax-independent programming intent".

Examiner responds: The claim limitation does not have means for showing a data structure. The claim is solely the steps for identifying nodes.

Figure 1.10 in page 13 and figure 1.11(a) (Aho) include a data structure. In light of the specification, each node id1, id2, or id3, or node :=, +, or \* in the data structure has means of syntax-independent, and has means of a programmer's intent since the node can represent a sub-tree (specification describes the programmer's intent as a high level programming construct: spec: p.5, lines 5-10).

In the claim, applicants' use of "*representing a syntax-independent programming intent*" is an intended use since there is no step, functionality, or further limitation to function the steps of identification to the appearance of *syntax-independent programming intent*.

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See MPEP 706.03(a). Language directed to an intended use did not result in a structural or functional difference with respect to prior art and were held not to serve as a limitation on the claim. See *In re Schreiber*, 44 USPQ2d 1429 (CAFC 1997).

Thus, a limitation on a claim can broadly be thought of then as its ability to make a meaningful contribution to the definition of the invention in a claim. In other words, language that is not functionally interrelated with the useful acts, structure, or properties of the claim will not serve as a limitation. See *In re Gulack*, 217 USPQ 401 (CAFC 1983), *Ex parte Carver*, 227 USPQ 465 (BdPatApp&Int 1985) and *In re Lowry*, 32 USPQ2d 1031 (CAFC 1994) where language provided certain limitations because of specific relationships required by the claims.

In this situation, applicants attempt to broaden the scope of the claim in which it is solely for identifying nodes. A visual inspection of a given data structure included with a node representing a sub tree, such as the tree of figure 1.11(a), would be read into the claim limitation.

- In regards to claims 17 and 21, applicants hold the similar argument as they argued in the claim 13.

Examiner responds: Claim 17 and claim 21 have the similar functionality of claim 13. Therefore, examiner contends the same reason as discussed in the response to the argument of claim 13.

#### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

The claims 21-24 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 21-24:

Claims 21-24 which are led by claim 21 are identified as a data structure per se.

Claim 21 recites, *"a data structure stored on one or more computer readable media, the data structure comprising:*

*a first node representative of a syntax-independent programming intent;*

*a second node having data to be manipulated when implementing the syntax-independent programming intent; and wherein the first node has a unique identifier of second node, and the first node uniquely identifies code for implementing the programming intent"*. The limitation of claim 21 (and dependent claims 22-24) is the description of nodes in a tree. Thus, the claims are data structure per se, and are not limited to practical applications.

Claims 21-24 which are identified to data structures per se because the components in the claims are labeled as nodes fields, identifiers, list, without further limitations for interacting to a computer. The lack of functionality for interacting to the computer will not imply the claims to produce a practical result that is required by the statute set forth.

A claim, which is merely claiming nonfunctional descriptive material even being stored in a computer-readable medium without further practical application, shall not make the claim eligible for patenting (see MPEP 2106).

To be statutory claims, the claims would overcome non functional descriptive materials by providing specific utility and particular claimed functionality for how the fields, nodes to interface to the computer to produce a practical thing. Claims 21-24 are therefore considered as data structure per se, and the claims are held as non-statutory subjected to 35 U.S.C 101 rejection.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Aho et al., "Compilers, Principles, Techniques, and Tools" (1986).

Regarding claim 13:

*"One or more computer readable media comprising computer executable instructions that, when executed, direct a computer to implement a method comprising.*

*identifying a first node of a data structure, the first node representing a syntax-independent programming intent (see page 14, with regards to nodes id1, id2, id3, or :=, +, \*):*

*identifying a further node of the data structure, the further node being based on the first node (see page 13, illustration (1.3)), where the further node contains data (see page 14, data structure 1.11(b)); and*

*identifying a unique name for code associated with the syntax-independent programming intent (see page 14, node id1, id2, or id3)" :*

Aho teaches techniques to build a compiler. The compiler is known as a program which is stored in a computer medium for identifying programming constructs in a computer source program. It provides translating the programming constructs into executable code. Aho teaches a phase in the compiler that can generate a programming construct into a syntax tree (see figure 1.2, page 2). Figure 1.2 expresses the programming construct 'position := initial + rate \* 60'. This programming construct is equivalent to 'id1 := id2 + id3 \* 60' expressed through the phase of syntax analysis or semantic analysis (see figure 1.10, page 13). A further Aho's technique provides generating a data structure (see figure 1.11(b), page 14) from a token stream expressed by the syntax tree (see figure 1.11(a), page 14). The semantic analysis shows that it identifies each token, which is expressed as a node (figure 1.11(a)), then converts the token into an equivalent interior node of another equivalent data structure (figure 1.11(b)).

- It identifies the first node ':= ' to form the root for the original expression of the syntax tree (see page 12, line 22). It identifies the nodes in right of ':= '. (In a simple case, the right of node ':= ' is a data node. For instance, if the programming construct is simplified as: Position := m; where m is a number, then the right

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node is data node 'm'). This identification is specified as forming the right child node or the right children nodes. It identifies the left node which has a unique name 'id1' (see page 12, lines 25-34).

Regarding claim 14:

Given the broadest interpretation of this claim in light of the specification:

Aho teaches the claim in the phase: Code generator (figure 1.10, page 13). The unique name id1 is converted into executable code (figure 1.10: output of the code generator) which is executed by a computer.

Regarding claim 15: Output code of Code generator (figure 1.10, page 13) is low-level computational constructs.

Regarding claim 16: The children nodes that express 'id2 + id3 \* 60' form a hierarchy tree of nodes.

These nodes are repeated in a programming intent ':= ' as being tem1, tem2, and tem3 for the substitution of nodes intoreal (60), id3 \* temp1, id2 + temp2, respectively.

Regarding claim 17: Claim 17 has the similar functionality of claim 13, where the recited step identifying a first node in the claim 1 is changed into the recited step reading a first node. The claim's functionality has corresponding to the functionality of claim 13. Claim 17 is rejected in the same reason set forth in connecting to the rejection of claim 13.

As per claims 18-20: The claims' functionality has corresponding to the functionality of claims 14-16. The claims are rejected in the same reason set forth in connecting to the rejections of claims 14-16.

As per claim 21:

Claim 21 recites a data structure in which each node is corresponding to the steps of identification in the claim 13. The claim's functionality has corresponding to the functionality of claim 13. Claim 21 is rejected in the same reason set forth in connecting to the rejection of claim 13.

As per claims 22-23: The claims' functionality has corresponding to the functionality of claims 16 and 15 respectively. The claims are rejected in the same reason set forth in connecting to the rejections of claims 16 and claim 15.

As per claim 24: Claim recites, *a node type tag and unique identifier pointing to implement code; an optional data section; and a list of offspring of the node identified by the node type tag and a list of*



*pointers to further nodes*". The recitation corresponds to the data structure (b) given in figure 1.11. Figure 1.11(b) as shown includes a node type tag, a pointer to implement code, and an optional data section (in the far right of a right node, The second or third section in a node represents a list of offspring, The arrows show that each section has a least a pointer to point to the further node (see figure 1.11(b)).

### **Conclusion**

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM ET. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552.

The fax phone numbers for this Group are:

Official: (703) 746-7239;

After Final: (703) 746-7238;

Non-Official: (703) 746-7240.


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

TTV  
July 11, 2003



**TUAN Q. DAM**  
**PRIMARY EXAMINER**